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10/530,540	04/06/2005	Alexandru Petrescu	CR00552P	5759

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EXAMINER	
SMITH, JOSHUA Y	

ART UNIT	PAPER NUMBER
2619	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/530,540	PETRESCU ET AL.	
	Examiner	Art Unit	
	JOSHUA SMITH	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 March 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The amendment filed 03/24/2008 has been entered.

- **Claims 1-20 are pending.**
- **Claims 1-20 stand rejected.**

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In regard to Claim 1, Claim 1 states "said access node **substitutes** its address in said message" (emphasis added by examiner). Applicant does not adequately disclose in page 22, line 33 to page 23, lines 10, and in FIG. 4, or elsewhere, how a DHCP relay (DR) or access router (AR) substitutes an address, or any other message component, with its own address in a message, since there is no mention of an address, or any other message component, that is being substituted (or being replaced in anyway), and there is no mention of what specific type of address, or any other message component, in a message that is to be substituted (or

to be replaced in anyway), and there is no mention of a location of a component within an message that is to be substituted (or to be replaced in anyway). Applicants disclose in page 22, line 33 to page 23, lines 10, and in FIG. 4, that "the DR also **adds** a new route to this address though the (memorized) interface address that received the 'CONFIRM' message, as in step 460. This route **addition** to the 'CONFIRM' message is propagated up-stream..." (emphasis added by examiner). As a result, Applicants do not adequately disclose in page 22, line 33 to page 23, lines 10, and in FIG. 4, or elsewhere, how a DHCP relay (DR) or access router (AR) substitutes an address, or any other message component, with its own address in a message, in such a manner that one of ordinary skill in the art at the time of the invention could make and use the claimed invention.

Claims 2-6 are rejected through dependence from Independent Claim 1.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In regard to Claim 1, Claim 1 states "said access node **substitutes** its address in said message" (emphasis added by examiner). This is indefinite since it is unclear what address, or what other component of a message, is being substituted (or being replaced in anyway). Examiner will treat "substitute" to

mean that an access node substitutes an IP address in a message with its own IP address.

In addition, Claim 1 states "said access node substitutes **its address** in said message" (emphasis added by examiner). This is indefinite since it is unclear if the address is an "**IP** address" of the access node that was stated previous to this excerpt and that was added in the amendment, or some other type of address. Examiner will treat "its address" to mean the access node's **IP** address.

Claims 2-6 are rejected through dependence from Independent Claim 1.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 4-6, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over La Porta et al. (Document Number: EP 1 011 241 A1) in view of Immonen et al. (US 7,006,472 B1), Jang et al. (Pub. No.: US 2001/0043571 A1), Prasad et al. (Patent No.: US 7,054,328 B2), and Heller (Patent No.: US 7,139,833 B2), hereafter referred to as La Porta, Immonen, Jang, Prasad, and Heller, respectively.

In regards to Claims 1 and 6, La Porta teaches in column 5, lines 43-48 and 51-54, Mobile IP wireless access for Internet Protocol (IP)-based network of mobile devices (supporting mobility in an Internet Protocol (IP)-based data network).

La Porta also teaches in column 16, lines 20-31, a path setup message that is sent and initiated by a mobile device that is used to update routing table entries for selected routers, where, in column 18, lines 16-18, and in FIG. 9, page 33, a path setup message contains a mobile device IP address field (item 314, FIG. 9) that is used to inform a receiving router of the current IP address assigned for a mobile device within a domain (generating a first message at a mobile node, wherein the message contains an address capable of use for route maintenance to/from a mobile device, and a mobile node transmitting a generated message to a first access node).

La Porta also teaches in column 35, lines 1-8, 26-31, and 46-53, and in FIG. 17, page 42, a base station item BS11 receives a path setup message from a mobile device (item 114, FIG. 17) and forwards the message so that it is received by a domain root router (item 360, FIG. 17), which, in column 12, lines 28-34, a DHCP server may be implemented within a root router (an access node forwarding generated message to a dynamic host configuration (DHCP) Server, Access router).

La Porta also teaches in column 35, line 57 to column 36, line 17, a domain root router processes the setup message and adds a routing table entry corresponding to a mobile device for forwarding packets destined to the mobile device (DHCP server analyzing message to determine a route to deliver data to a mobile node).

La Porta also teaches in column 35, lines 4-26, upon receiving a path setup message, a base station creates a routing entry for routing packets for delivery to a mobile device (an access node analyzing a message to determine a route to deliver data to a mobile node).

La Porta teaches in column 34, lines 41-43 and 54-55, and in FIG. 17, page 42, a mobile device handoff from one base station to another base station, which causes a mobile device to generate and transmit a setup message and routers to forward a path setup message for each handoff of the mobile device, as outlined in column 35, line 1 to column 36, line 25, and discussed above in the rejection of Claim 1 (repeating steps of generating, transmitting and forwarding of a second message when mobile node attaches to a second access node, and analyzing second message at DHCP server).

La Porta also teaches in column 16, lines 34-38 and 43-46, a path setup message sent by a base station to a root router and intermediate routers to re-fresh routing table entries for those selected routers which are utilized for packet transport from the root router to the base station (access node triggering one or more route update messages to a number of network elements between the access node and DHCP server, intermediate router). La Porta fails to teach stateful IPv6 autoconfiguration, access node substitutes its own address in a message, update

message from a server, repeating steps, second message, second access node, and repeating steps of generating, transmitting and forwarding for a second message that confirms an IP address of a mobile node when a mobile node attaches to a second access node. Immonen teaches stateful IPv6 autoconfiguration, Jang teaches an access node substitutes its own address in a message, Prasad teaches an update message from a server, Heller teaches repeating steps, second message, second access node, and repeating steps of generating, transmitting and forwarding for a second message that confirms an IP address of a mobile node when a mobile node attaches to a second access node

In the same field of endeavor, Immonen teaches in column 31, lines 25-28, acquiring an Ipv6 address involves a stateful address autoconfiguration, i.e. DHCPv6 (stateful IPv6 autoconfiguration). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Immonen with the invention of La Porta since Immonen shows a system specifically implementing stateful address autoconfiguration for assigning Ipv6 addresses, and can be incorporated into the method of La Porta to update the method of La Porta so that it is compatible with the emerging Ipv6 and allows the DHCP components of La Porta to utilize DHCPv6.

In the same field of endeavor, Jang teaches in paragraph [0115], a network device substitutes IP addresses in a header of RTP data streams substituting source IP addresses with its own proxy IP address (an access node substitutes its own address in a message). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Jang with the invention of La Porta since Jang

provides a method where a network device can substitute its address to a packet, allowing a base station in the method of La Porta to be able to identify itself in a message it forwards from a mobile device and allow a root router to store or process this information where needed in updating routing table entries.

In the same field of endeavor, Prasad teaches in column 7, lines 60-63, a centralized server sending update messages to update IP routing tables of Signal Transfer Points (STP) (an update message from a server). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Prasad with the invention of La Porta since Prasad shows that a server can update routing tables of intermediate network nodes, allowing the method of La Porta to have a root node that can update table entries of routers when it detects changes in a domain if a base station does not detect a change, or allows a user to access the root node and manually update routing tables of routers through the root node of a domain.

In the same field of endeavor, Heller teaches in column 3, lines 60-67, an MN (mobile node) detects a BS and sends normal link layer messages to a BS (base station) identifying itself, a PMN (proxy mobile node) within a BS (base station) retrieves Mobile IP information from a database based on the identity of the MN, this information includes an IP address for each of the MN and other network elements needed to perform mobile IP registration, and a network further comprises a new base station (BS) and a new foreign agent (FA) provided at a new BS, and a new PMN (proxy mobile node) is provided at a new BS (base station), and if a MN (mobile node) detects a new BS, it first sends normal link layer messages to the new BS identifying itself, and the

new PMN within the new BS retrieves Mobile IP information from a data based on identity of the MN, where this information includes an IP address for each of the MN and other network elements needed to perform a new mobile IP registration (repeating steps, second message, second access node, and repeating steps of generating, transmitting and forwarding for a second message that confirms an IP address of a mobile node when a mobile node attaches to a second access node). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Heller with the invention of La Porta since Heller provides a system in which a mobile node can maintain a Mobile IP address even after moving between base stations (see Heller, column 2, lines 14-19), reducing overhead that is associated with allocating new IP addresses and reducing the processing burden of a mobile node, and one of ordinary skill in the art at the time of the invention would appreciate the advantage of maintaining an IP address in a network as a mobile devices moves between base stations in that it reduces the processing complexity of a mobile device and allows lower cost user devices and requires less overhead between a network and a user device as handoff occurs.

In regards to Claim 2, La Porta teaches in column 36, lines 2-17, a root router, after receiving and processing a setup message that it is different from an earlier setup message, will update an entry associated with a mobile device (analyzing second message at DHCP Server to determine an address used for route maintenance in a second message is inconsistent with a address analysed in a first message). La Porta

fails to teach stateful IPv6 autoconfiguration, and triggering a route update message based on a determination. Immonen teaches stateful IPv6 autoconfiguration, Li teaches triggering a route update message based on a determination.

In the same field of endeavor, Immonen teaches in column 31, lines 25-28, acquiring an Ipv6 address involves a stateful address autoconfiguration, i.e. DHCPv6 (stateful IPv6 autoconfiguration). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Immonen with the invention of La Porta since Immonen shows a system specifically implementing stateful address autoconfiguration for assigning Ipv6 addresses, and can be incorporated into the method of La Porta to update the method of La Porta so that it is compatible with the emerging Ipv6 and allows the DHCP components of La Porta to utilize DHCPv6.

In the same field of endeavor, Li teaches in column 6, lines 45-49, an event triggers transmission of a database update packet by a node (triggering a transmission of a route update message based on a determination). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Li with the invention of La Porta since Li shows an apparatus that transmits an update packet when an event occurs, allowing a device in the method of La Porta to send an update packet to other devices if forwarding a setup message alone does not update a sufficient number of devices in a domain, or if a user wants devices outside the devices that receive a setup message to also be updated with the same information.

In regards to Claim 4, as discussed in the rejection of Claim 1, La Porta in view of Immonen teaches stateful IPv6 autoconfiguration, a first IP message, and, as discussed in the rejection of Claim 2, La Porta teaches a second IP message. La Porta fails to teach stateful autoconfiguration and a DHCPv6 "CONFIRM" message. Immonen further teaches DHCPv6 "CONFIRM" message.

Immonen further teaches in column 23, lines 52-53, a confirmation message, and in column 31, lines 25-28, DHCPv6 (DHCPv6 "CONFIRM" message). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Immonen with the invention of La Porta since Immonen shows a system specifically implementing stateful address autoconfiguration for assigning Ipv6 addresses, and can be incorporated into the method of La Porta to update the method of La Porta so that it is compatible with the emerging Ipv6 and allows the DHCP components of La Porta to utilize DHCPv6.

In regards to Claim 5, as discussed in the rejection of Claim 1, La Porta teaches address information used for route maintenance and triggering a protocol. La Porta further teaches a distance-vector routing protocol, routing information protocol (RIP).

La Porta teaches in column 23, lines 24-28, messages are routed within a domain utilizing routing entries created by conventional routing protocols, such as Routing Information Protocol (RIP) (address information based on triggered routing information protocol (RIP)).

In regards to Claims 19 and 20, La Porta teaches in column 15, lines 7-14, processing and memory resources at each router for implementing forwarding algorithms and other router functions (a storage medium storing processor-implementable instructions, and an apparatus adapted to perform method steps).

Claims 3 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over La Porta in view of Immonen, Jang, Prasad, Heller, and further in view of Shitama (Patent No.: US 7,257,104 B2), hereafter referred to as Shitama.

In regards to Claim 3, as discussed in the rejection of Claim 1, La Porta teaches a number of network elements between a DHCP Server and an access node and address information for route maintenance to a mobile node, and, as discussed in the rejection of Claim 2, La Porta in view of Li teaches a first access node and second access node and transmitting in response to a determination. La Porta fails to teach a deletion message that instructs in deleting obsolete information. Shitama teaches these limitations.

In the same field of endeavor, Shitama teaches in column 5, lines 37-44, a routing update message that may cause a router to delete an entry for a mobile node in a routing table when a mobile node moves between subnetworks in a domain or different domains (a deletion message that instructs in deleting obsolete information). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Shitama with the invention of La Porta since Shitama shows a system where a node can send a deletion message to a router to delete an entry, and

can allow a root router in the method of La Porta to delete entries in routers if they have become obsolete and a setup message failed to reach the routers.

In regards to Claim 18, as discussed in the rejection of Claim 3, La Porta in view of Immonen, Jang, Prasad, Li, and Shitama teaches a communication message comprises route deletion instructions generated. La Porta fails to teach an IPv6 message. Immonen further teaches these limitations.

In the same field of endeavor, Immonen teaches in column 21, lines 16-19, IPv6 packets (IPv6 messages). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Immonen with the invention of La Porta since Immonen shows a system specifically implementing stateful address autoconfiguration for assigning Ipv6 addresses, and can be incorporated into the method of La Porta to update the method of La Porta so that it is compatible with the emerging Ipv6 and allows the DHCP components of La Porta to utilize DHCPv6.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over La Porta et al. (Document Number: EP 1 011 241 A1) in view of Li (Patent No.: US 6,385,174 B1), Templin (Pub. No.: US 2001/0040895 A1), and Heller (Patent No.: US 7,139,833 B2), hereafter referred to as La Porta, Li, Templin, and Heller, respectively.

In regards to Claim 7, La Porta teaches in column 5, lines 43-48 and 51-54, Mobile IP wireless access for Internet Protocol (IP)-based network of mobile devices, and, in column 16, lines 20-31, a path setup message that is sent and initiated by a

mobile device that is used to update routing table entries for selected routers, where, in column 18, lines 16-18, and in FIG. 9, page 33, a path setup message contains a mobile device IP address field (item 314, FIG. 9) that is used to inform a receiving router of the current IP address assigned for a mobile device within a domain (an access node with a receiving function for receiving a message from a mobile node that contains an IP address of a mobile node for use in route maintenance to deliver data to a mobile node).

La Porta also teaches in column 15, lines 7-8 and 21-25, routers include base stations and routers each include a processor, and, in column 35, lines 4-26, upon receiving a path setup message, a base station creates a routing entry for routing packets for delivery to a mobile device (a processor operatively coupled to receiving function and processor analyses a first IP message to determine a route to deliver data to a mobile node).

La Porta also teaches in column 16, lines 34-38 and 43-46, a path setup message sent by a base station to a root router and intermediate routers to re-fresh routing table entries for those selected routers which are utilized for packet transport from the root router to the base station, where, in column 12, lines 28-34, a DHCP server may be implemented within a root router (a transmission of a route update message from an access node to a number of network elements between an access node and a DHCP server). La Porta fails to teach triggering a transmission of a route update message, stateful IPv6 autoconfiguration, a message that confirms an IP address of mobile node, and a mobile node IP address previously acquired by a mobile

node from a different access node, used for route maintenance to deliver data to and from a mobile node. Li teaches triggering a transmission of a route update message, Templin teaches stateful IPv6 autoconfiguration, Heller teaches a message that confirms an IP address of mobile node, a mobile node IP address previously acquired by a mobile node from a different access node, used for route maintenance to deliver data to and from a mobile node.

In the same field of endeavor, Li teaches in column 6, lines 45-49, an event triggers transmission of a database update packet by a node (triggering a transmission of a route update message). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Li with the invention of La Porta since Li shows an apparatus that transmits an update packet when an event occurs, allowing a device in the method of La Porta to send an update packet to other devices if forwarding a setup message alone does not update a sufficient number of devices in a domain, or if a user wants devices outside the devices that receive a setup message to also be updated with the same information.

In the same field of endeavor, Templin teaches in paragraphs [0039]-[0042] and [0308], nodes sending link-state updates to other nodes, and, in paragraphs [0271] and [0272], hosts and IPv6 routers receiving router advertisements and implementing auto-configuration (stateful IPv6 autoconfiguration). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Templin with the invention of La Porta since Templin provides a system of advertising link-states and topology information using autoconfiguration of IPv6 in a wireless environment,

which can be incorporated into the wireless access of packet-based networks of the La Porta to allow the advanced implementation of IPv6 in updating information involved in handoffs, and one of ordinary skill in the art at the time of the invention would appreciate the advantages of implementing IPv6 to allow global addressing and in updating the system of La Porta to be compatible with IPv6 addressing as IPv6 becomes more prevalent in networks and the Internet.

In the same field of endeavor, Heller teaches in column 3, lines 60-67, a new PMN (proxy mobile node) is provided at a new BS (base station), and if a MN (mobile node) detects a new BS, it first sends normal link layer messages to the new BS identifying itself, and the new PMN within the new BS retrieves Mobile IP information from a data based on identity of the MN, where this information includes an IP address for each of the MN and other network elements needed to perform a new mobile IP registration (a message that confirms an IP address of mobile node).

Heller teaches in column 2, lines 4-5, an MN (mobile node) receives an IP address from an address assigning authority home network, such as an ISP, which includes a Mobile IP Home Agent (HA) and a server (a mobile node IP address previously acquired by a mobile node from a different access node, used for route maintenance to deliver data to and from a mobile node). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Heller with the invention of La Porta since Heller provides a system in which a mobile node can maintain a Mobile IP address even after moving between base stations (see Heller, column 2, lines 14-19), reducing overhead that is associated with allocating new

IP addresses and reducing the processing burden of a mobile node, and one of ordinary skill in the art at the time of the invention would appreciate the advantage of maintaining an IP address in a network as a mobile devices moves between base stations in that it reduces the processing complexity of a mobile device and allows lower cost user devices and requires less overhead between a network and a user device as handoff occurs.

Claims 8, 9, 13, 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over La Porta et al. (Document Number: EP 1 011 241 A1) in view of Prasad et al. (Patent No.: US 7,054,328 B2), Li (Patent No.: US 6,385,174 B1), Templin (Pub. No.: US 2001/0040895 A1), and Heller (Patent No.: US 7,139,833 B2), hereafter referred to as La Porta, Prasad, Li, Templin, and Heller, respectively.

In regards to Claim 8, La Porta teaches in column 5, lines 43-48 and 51-54, Mobile IP wireless access for Internet Protocol (IP)-based network of mobile devices, and, in column 35, lines 1-8, 26-31, and 46-53, and in FIG. 17, page 42, a base station item BS11 receives a path setup message from a mobile device (item 114, FIG. 17) and forwards the message so that it is received by a domain root router (item 360, FIG. 17), which, in column 12, lines 28-34, a DHCP server may be implemented within a root router, and, in column 16, lines 20-31, a path setup message that is sent and initiated by a mobile device that is used to update routing table entries for selected routers, where, in column 18, lines 16-18, and in FIG. 9, page 33, a path setup message contains a mobile device IP address field (item 314, FIG. 9) and other address fields

(items 316 and 318, FIG. 9) that are used to inform a receiving router of the current IP address assigned for a mobile device within a domain (a DHCP Server with a receiving function for receiving an IP message from a mobile node through an access node, and where a message contains a number of addresses used for route maintenance to deliver data to a mobile node via an access node).

La Porta also teaches in column 12, lines 28-34, a root router with a processor residing in the root router, and, in column 35, line 57 to column 36, line 17, a domain root router processes the setup message and adds a routing table entry corresponding to a mobile device for forwarding packets destined to the mobile device (a processor operably coupled to a receiving function and processor analyses of a first IP message to determine a route to deliver data to a mobile node).

La Porta also teaches in column 16, lines 34-38 and 43-46, a path setup message sent to intermediate routers to re-fresh routing table entries for those selected routers which are utilized for packet transport from the root router to the base station (transmission of a route update message to a number of network elements between an access node and DHCP server). La Porta fails to teach transmission of an update message from a server and triggering a transmission of a route update message. Prasad teaches an update message from a server, and Li teaches triggering a transmission of a route update message.

In the same field of endeavor, Prasad teaches in column 7, lines 60-63, a centralized server sending update messages to update IP routing tables of Signal Transfer Points (STP) (an update message from a server). It would have been obvious

to one of ordinary skill in the art at the time of the invention to combine the invention of Prasad with the invention of La Porta since Prasad shows that a server can update routing tables of intermediate network nodes, allowing the method of La Porta to have a root node that can update table entries of routers when it detects changes in a domain if a base station does not detect a change, or allows a user to access the root node and manually update routing tables of routers through the root node of a domain.

In the same field of endeavor, Li teaches in column 6, lines 45-49, an event triggers transmission of a database update packet by a node (triggering a transmission of a route update message). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Li with the invention of La Porta since Li shows an apparatus that transmits an update packet when an event occurs, allowing a device in the method of La Porta to send an update packet to other devices if forwarding a setup message alone does not update a sufficient number of devices in a domain, or if a user wants devices outside the devices that receive a setup message to also be updated with the same information.

In the same field of endeavor, Templin teaches in paragraphs [0039]-[0042] and [0308], nodes sending link-state updates to other nodes, and, in paragraphs [0271] and [0272], hosts and IPv6 routers receiving router advertisements and implementing auto-configuration (IPv6 data network and messaging). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Templin with the invention of La Porta since Templin provides a system of advertising link-states and topology information using autoconfiguration of IPv6 in a wireless environment,

which can be incorporated into the wireless access of packet-based networks of the La Porta to allow the advanced implementation of IPv6 in updating information involved in handoffs, and one of ordinary skill in the art at the time of the invention would appreciate the advantages of implementing IPv6 to allow global addressing and in updating the system of La Porta to be compatible with IPv6 addressing as IPv6 becomes more prevalent in networks and the Internet.

In the same field of endeavor, Heller teaches in column 3, lines 60-67, a new PMN (proxy mobile node) is provided at a new BS (base station), and if a MN (mobile node) detects a new BS, it first sends normal link layer messages to the new BS identifying itself, and the new PMN within the new BS retrieves Mobile IP information from a data based on identity of the MN, where this information includes an IP address for each of the MN and other network elements needed to perform a new mobile IP registration (a second access node, a message that confirms an IP address of mobile node).

Heller teaches in column 2, lines 4-5, an MN (mobile node) receives an IP address from an address assigning authority home network, such as an ISP, which includes a Mobile IP Home Agent (HA) and a server (a mobile node IP address previously acquired by a mobile node from a first access node, used for route maintenance to deliver data to and from a mobile node). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Heller with the invention of La Porta since Heller provides a system in which a mobile node can maintain a Mobile IP address even after moving between base stations (see

Heller, column 2, lines 14-19), reducing overhead that is associated with allocating new IP addresses and reducing the processing burden of a mobile node, and one of ordinary skill in the art at the time of the invention would appreciate the advantage of maintaining an IP address in a network as a mobile devices moves between base stations in that it reduces the processing complexity of a mobile device and allows lower cost user devices and requires less overhead between a network and a user device as handoff occurs.

In regards to Claim 9, as discussed in the rejection of Claim 8, La Porta teaches a processor and addresses capable of use for route maintenance.

La Porta further teaches in column 34, lines 41-43 and 54-55, and in FIG. 17, page 42, a mobile device handoff from one base station to another base station, which causes a mobile device to generate and transmit a setup message and routers to forward a path setup message for each handoff of the mobile device, as outlined in column 35, line 1 to column 36, line 25, and discussed above in the rejection of Claim 1, and, in column 36, lines 2-17, a root router, after receiving and processing a setup message that it is different from an earlier setup message, will update an entry associated with a mobile device (DHCP Server receives and analyses a second IP message comprising a second set of addresses capable of use for route maintenance from a mobile node through a second access node, and analyzing a second IP messge to determine whether a second set of addresses are consistent with a first st of addresses).

In regards to Claim 13, as discussed in the rejection of Claim 8, La Porta teaches route maintenance information and first IP message, and, as discussed in the rejection of Claim 9, a second IP message.

La Porta further teaches in column 9, lines 40-47, a memory residing in a root router (memory element operably coupled to a processor and containing a router table for storing maintenance information extracted from IP message).

In regards to Claim 14, as discussed in the rejection of Claim 8, La Porta teaches a DHCP server. La Porta further teaches in column 9, lines 21-34, and in FIG. 2, page 28, a domain-based architecture for a Handoff-Aware Access Internet Infrastructure (HAEAII), where Domian1 includes a root router (a data communication network adapted to incorporate a DHCP Server).

In regards to Claim 17, as discussed in the rejection of Claim 8, La Porta teaches a data communications network and a first access node, and, as discussed in the rejection of Claim 9, La Porta teaches a second access node. La Porta further teaches in column 5, lines 43-48 and 51-54, Mobile IP wireless access for Internet Protocol (IP)-based network of mobile devices, and, in column 35, lines 1-8, 26-31, and 46-53, and in FIG. 17, page 42, a base station item BS11 receives a path setup message from a mobile device (item 114, FIG. 17) (wireless access media communication link to facilitate a wireless link).

Claims 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over La Porta in view of Prasad, Li, Templin, Heller, and further in view of Shitama.

In regards to Claim 10, as discussed in the rejection of Claim 8, La Porta teaches a DHCP Server, a processor, a first access node, a second access node, and address information used for route maintenance to a mobile node. La Porta fails to teach triggering a route update message to an access node to delete obsolete information. As discussed in the rejection of Claim 8, Li teaches triggering a route update message to an access node in response to a determination. Shitama teaches a deletion message that instructs in deleting obsolete information.

In the same field of endeavor, Shitama teaches in column 5, lines 37-44, a routing update message that may cause a router to delete an entry for a mobile node in a routing table when a mobile node moves between subnetworks in a domain or different domains (a deletion message that instructs in deleting obsolete information). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Shitama with the invention of La Porta since Shitama shows a system where a node can send a deletion message to a router to delete an entry, and can allow a root router in the method of La Porta to delete entries in routers if they have become obsolete and a setup message failed to reach the routers.

In regards to Claim 16, as discussed in the rejection of Claim 8, La Porta teaches a data communications network includes a first access node, and a number of

routers located between an access node and a DHCP Server, and, as discussed in the rejection of Claim 9, La Porta teaches a second access node. La Porta fails to teach a tree-type topology. Shitama teaches this limitation.

In the same field of endeavor, Shitama teaches in column 10, lines 51-53, and in FIG. 16, Sheet 14 of 23, a domain (item 24) that form a tree with a border router (item 23) as a root (a tree-type topology). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Shitama with the invention of La Porta since Shitama shows a tree topology for a domain, which can be used to provide a topology in the method of La Porta to provide efficient message forwarding and efficient monitoring of network activity.

Claims 11, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over La Porta in view of Prasad, Li, Templin, Heller, and further in view of Immonen.

In regards to Claim 11, as discussed in the rejection of Claim 8, La Porta teaches a DHCP Server and a first IP message, and, as discussed in the rejection of Claim 9, a second IP message. La Porta fails to teach IPv6 messages. Immonen teaches these limitations.

In the same field of endeavor, Immonen teaches in column 21, lines 16-19, IPv6 packets (IPv6 messages). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Immonen with the invention of La Porta since Immonen shows a system specifically implementing stateful address

autoconfiguration for assigning Ipv6 addresses, and can be incorporated into the method of La Porta to update the method of La Porta so that it is compatible with the emerging Ipv6 and allows the DHCP components of La Porta to utilize DHCPv6.

In regards to Claim 12, as discussed in the rejection of Claim 8, La Porta teaches a first IP message, and, as discussed in the rejection of Claim 9, La Porta teaches a second IP message. La Porta fails to teach an IPv6 stateful autoconfiguration 'CONFIRM' message. As discussed in the rejection of Claim 11, Immonen teaches IPv6. Immonen further teaches stateful autoconfiguration 'CONFIRM' message.

In the same field of endeavor, Immonen teaches in column 31, lines 25-28, acquiring an Ipv6 address involves a stateful address autoconfiguration, i.e. DHCPv6, and, in column 23, lines 52-53, a confirmation message (stateful autoconfiguration "CONFIRM" message). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Immonen with the invention of La Porta since Immonen shows a system specifically implementing stateful address autoconfiguration for assigning Ipv6 addresses, and can be incorporated into the method of La Porta to update the method of La Porta so that it is compatible with the emerging Ipv6 and allows the DHCP components of La Porta to utilize DHCPv6.

In regards to Claim 15, as discussed in the rejection of Claim 8, La Porta teaches a first access node and access router. La Porta further teaches in column 20,

lines 39-43, assuming a DHCP server is co-located at a root router, then a base station will act as a DHCP server relay (access router collocated with relay functions). La Porta fails to teach DHCPv6 functions. Immonen teaches these limitations.

Immonen further teaches in column 31, lines 25-28, DHCPv6 (DHCPv6 functions). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Immonen with the invention of La Porta since Immonen shows a system specifically implementing stateful address autoconfiguration for assigning Ipv6 addresses, and can be incorporated into the method of La Porta to update the method of La Porta so that it is compatible with the emerging Ipv6 and allows the DHCP components of La Porta to utilize DHCPv6.

Response to Arguments

I. Arguments for Claim Rejection under 35 U.S.C. § 112.

Applicant's arguments, see page 7, filed 03/24/2008, with respect to Claims 1-20 have been fully considered and are persuasive. The rejection of Claims 1-20 has been withdrawn.

II. Arguments for Claim Rejection under 35 U.S.C. § 103.

Applicant's arguments filed 03/24/2008 have been fully considered but they are not persuasive. Applicants submit that La Porta is directed to an IPv4 system, and that stateful versus stateless address auto-configuration is a distinctive characteristic of IPv6 and is a distinction that does not exist in IPv4 and therefore does not exist in La Porta.

Examiner respectfully disagrees that this is sufficient for withdrawal of the rejection of Claims 1, 7 and 8. Although stateful versus stateless address auto-configuration does not exist in IPv4, La Porta teaches a method of updating network elements that can still be implemented in an IPv6 system since the order in which network devices send update messages and which network elements are informed of and store updates can still be applied in an IPv6 system, and such basic steps and actions can be applied in an IPv6 network whether the network is implementing wither stateful or stateless address auto-configuration, and the fact that much of IPv6 is derived from IPv4 corroborates that methods that are applied in IPv4 can be adapted for application in IPv6 and can be more easily updated to IPv6 than if they needed to be applied to an unrelated protocol.

Applicants also submit that Claim 1 of Applicants provides for a MN generating, and conveying to an access node, a first stateful IP autoconfiguration message, and, by contrast, La Porta teaches an MN generating and conveying a path setup message, and that these messages have different semantics. Examiner respectfully disagrees that this is sufficient for withdrawal of the rejection of Claims 1, 7 and 8. As discussed in the rejections of Claims 1, 7 and 8, these messages serve substantively the same purposes, and although a message of La Porta is different from a message of Claim 1 of Applicants, these messages are sent with substantively the same purposes of updating routing information of network components.

Applicants also submit that Claim 1 of Applicants, in using a stateful IP autoconfiguration message, uses a standard message while La Porta teaches a new

message that is proprietary to La Porta, and La Porta requires modification to a MN that are not required by Claim 1. Examiner respectfully disagrees that this is sufficient for withdrawal of the rejection of Claims 1, 7 and 8. Although La Porta teaches a new message that is proprietary to La Porta that may require modification to an IPv4 network device, this message still serves substantively the same purpose as the purpose of a message in Claim 1 of Applicants, and since this message taught by La Porta serves substantively the same purpose as the purpose of a stateful IP autoconfiguration message that is standard in IPv6, this corroborates that the method of La Porta can be modified and updated for implementation in IPv6 without modification to an IPv6 network device.

Applicents also submit that Immonen teaches that a MN uses DHCPv6 to aqirure a new IP address, and by contrast, Claim 1, as amended, teaches use of a stateful IP autoconfiguration message to confirm a previously acquired address. Examiner respectfully disagrees that this is sufficient for withdrawal of the rejection of Claim 1. As discussed in the rejection of Claim 1, Immonen is applied only to teach the limitations of "stateful IPv6 autoconfiguration", and as discussed above in the Response to Arguments and as discussed in the motivation of the rejection of Claim 1, the it would have been obvious to one of ordinary skill in the art at the time of the invention to implement modify the IPv4 method and system of La Porta for operation in an IPv6 network.

Applicant's other arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Inoue et al. (Pub. No.: US 2002/0186693 A1).

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA SMITH whose telephone number is (571)270-1826. The examiner can normally be reached on Monday-Thursday 9:30am-7pm, Alternating Fridays 9:30am-6pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joshua Smith
Patent Examiner
02 July 2008

/Hassan Kizou/
Supervisory Patent Examiner, Art Unit 2619